

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on October 7, 2004. Those in attendance were:

Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Greg Perfetti	State Bridge Design Engineer (Co-Chairman)
Allen Raynor	Assistant State Bridge Design Engineer
Paul Lambert	Structure Design Project Engineer
Tom Koch	Structure Design Project Engineer
Ron Hancock	State Bridge Construction Engineer
Chris Britton	Taylor and Murphy Construction Co.
Richard Holshouser	Sanford Contractors, Inc.
Chris Kreider	Regional Operations Engineer – Geotechnical Unit
Gichuru Muchane	Structure Design Engineer

During the review of the August 11th, 2004 meeting minutes, the following items were discussed:

1. *Welded Hoops*

Mr. Koch stated that after some research on the use of welded hoops in California and South Carolina, the Department is satisfied that the hoops can perform as well as spiral reinforcement during seismic events. He added that the welded area of the hoops was still a concern because of the potential reduction in the amount of concrete cover.

Mr. Koch stated that initially the Department expected the hoops to save time in tying the drilled shaft reinforcing. He asked the contractors what advantages or disadvantages they saw in utilizing hoops in lieu of spirals. Contractors stated that spirals were often delivered to the job site in limited lengths. They added that handling the spirals while retaining the required diameter and pitch was often a challenge. Mr. Britton stated that spirals for large diameter drilled shafts were difficult to handle and often the spacers become bent, adding to the difficulty in installing the spiral reinforcement. He stated that he thought the welded hoops would have a significant advantage for the large diameter columns.

Mr. Hancock reported that the project that had been proposed for use of welded hoops did not end up using them and therefore there are not current projects utilizing welded hoops at this time. He added that the Department will consider requests to use hoops.

2. *Contract times*

Mr. Hancock noted that contract times were last reviewed in 1988. He suggested forming a new committee to review contract times and update them as needed. As such, he requested contractors begin considering whether they would like to serve on the committee, and also to think about developments that have had an impact on contract times. Since several contractors would be in town for AGC-DOT committee meetings, Mr. Hancock suggested that the reviewing committee meet on the same day. Mr. Jenkins inquired if all contract times would be reviewed or just the structure working days. Mr. Hancock stated that the emphasis would be on the bridge contract times, but some roadway operations may also need to be reviewed.

3. *Project Special Provision – Crane Safety*

Mr. Hancock distributed copies of the Special Provision on crane safety and stated that it had been corrected and will be appearing in contracts beginning January 2005. He added that he expected OSHA to publish its ruling on crane safety in 2005.

The minutes of the August 11th, 2004 meeting were approved.

The following items of new business were discussed:

1. *Optional 10" Backwalls on Integral Abutments*

Mr. Muchane distributed an integral abutment detail showing an optional 10" wide backwall for contractors to review and provide feedback. Contractors had requested the optional backwall to allow placement of the reinforced bridge approach fill so that cranes can get as close to the bridge as possible when erecting girders. Mr. Muchane stated that the detail was subject to additional modifications to resolve constructibility issues.

Mr. Hancock inquired if it was possible to construct the reinforced approach fill in a similar manner to a wire or fabric wall without increasing the cost. This approach may eliminate the need for an optional backwall, or at least minimize the active pressure and crane surcharge loads on the backwall. *Mr. Kreider stated that the Geotechnical Engineering Unit would investigate this possibility.*

2. *TL-3 Rails on Temporary Bridges*

Mr. Koch stated that the Special Provision on Construction, Maintenance and Removal of Temporary Structures has been revised to require bridge rails on temporary structures to conform to the Test Level 3 (TL-3) criteria defined in the current edition of the AASHTO LRFD Bridge Design Specifications. Mr. Koch also discussed the background on this revision, and he distributed some basic information on the various test level criteria from the LRFD Bridge Design Specifications.

3. *Other*

- i. Mr. Holshouser stated that the new concrete overlays on cored slab bridges were increasing the cost such that it was comparable to a cast-in-place concrete deck. He inquired why the Department has decided to use concrete overlays. Mr. Perfetti responded by stating that the asphalt overlays have had numerous problems related to reflective cracking, and that sections of asphalt over the joints were spalling off, especially when used on high average daily truck traffic (ADTT) routes. Generally, infiltration of water and deicing salts is a potential maintenance problem. Mr. Perfetti added that in light of the rapidly changing application of cored slab bridges, the Department was in the process of reviewing the policy on the use of cored slab and box beam bridges on interstate, national highway system (NHS), and in general high ADTT routes. Mr. Perfetti stated that the asphalt performed well in the short term, but the use of a concrete wearing surface was expected to yield more cost effective long-term performance. He added that asphalt overlays may still be detailed on low ADTT bridges.

4. *Next Meeting*

The next meeting is scheduled for Wednesday, December 8th, 2004 in the Structure Design Unit conference Room C.